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Sectoral Structure, Qualification Characteristics and Patterns of Labour Mobility

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The paper has two main objectives. First, to investigate whether workers show significant differences in labour opportunities. Second, to test the hypothesis that tertiarisation has important effects explaining it. The hypotheses are: (1) tertiarisation has relevant effects on the structure of labour demand by skills; (2) the labour opportunities of workers can be influenced by the skills developed in their previous jobs and their concordance between sectoral changes. From a methodological point of view, the approach implies a study of labour transition data of workers, sectoral change and its qualification implications. In order to research the previous argument, the authors analyse labour mobility within European countries. Therefore, data used in the paper come from the European Community Household Panel (ECHP). All descriptive analyses have been carried out and the results from dynamic logit panel data model suggest that the relation of workers to tertiarisation and its implications approximated by their previous labour situation (sector and skill) are significant, explaining differences observed in labour transitions and its characteristics.

INTRODUCTION, APPROACHES AND MAIN FACTS

It is a well-known fact that economic progress necessarily implies changes in production systems and in the characteristics of the economic activity itself. For a long time now, these changes have corresponded to a large extent to the so-called tertiarisation processes, a consequence of which is a shift of the strategic core of productive systems from industry to services. Although it is not the only area where they are observed, their consequences are also reflected in the labour market, affecting the way in which employment is distributed among the different productive sectors.

Although employment tertiarisation has already been subject to several studies [for the Spanish case, see e.g. Cuadrado and del Río, 1993; Gutiérrez Junquera, 1993; Sáez, 1993; González Moreno, 1997; Cuadrado and Iglesias, 1999], the analyses regarding research into possible problems introduced by the sectorial change in the labour market are relatively limited. In this sense, there are two ways by which tertiarisation can affect the labour market, explaining the generation of unemployment:

(a) Tertiarisation modifies the manner in which total employment is distributed by activity sectors. While most employment creation takes place in the service sector, agricultural (trend evolution) and industrial (throughout the cycle) employment is being destroyed. To the extent that the groups of unemployed workers are obliged to spend some time finding a new job (duration of unemployment), or the figures related to the creation and destruction of jobs are different (difference between flows into and out of unemployment), tertiarisation can explain the appearance of certain levels of unemployment.
(b) As labour qualifications of those jobs created are not compatible with the ones of the dismissed workforce, tertiarisation can restrict the job opportunities of individuals, conditioning the results of the labour market, regardless of the fact that creation of employment could quantitatively absorb the surplus workforce generated by the sectorial destruction of employment.

While the first argument has already been subject to significant analyses [e.g. Dolado and Jimeno, 1997; Marimon and Zilibotti, 1998], there is insufficient literature regarding the second one. In this sense, and continuing the direction already started [see Cuadrado and Iglesias, 2003], our study is expected to examine the second working hypothesis in more depth. The aim is to provide data, even if they are just preliminary, that could be used to answer the following question: to what extent can the sectorial change become an important restriction with respect to labour opportunities for labour supply, as it modifies the composition of job demand by occupation?

The manner in which the analysis is made implies the study of labour mobility guidelines as a variable that can approximate the concept of labour opportunities, and tries to ascertain whether individuals with different qualifications have significant differences in their job transitions and, therefore, in the job opportunities that those transitions imply. All in all, we try to verify the idea that the sectoral change, by means of its implications on the demand related to qualifications, can condition participation in labour mobility processes.

From a theoretical perspective, the approaches most commonly used regarding the study of labour mobility consider that these processes are the result of voluntary decisions of the individuals and, therefore, they focus on analysis of the agent's characteristics and how these influence mobility decisions. Thus, we must stress the search models, according to which mobility reflects the agents' decisions regarding investment in the acquisition of information;[1] the *job-matching* theory [Jovanovic, 1979; Miller, 1984], where individuals try to maximise their suitability for the

new job by means of mobility; and the theory of *career mobility* [Rosen, 1972; Sicherman and Galor, 1990], according to which mobility is within the framework of individual career paths, where seniority and qualifications govern promotion to a higher status of occupation.

Against those approaches, Lilien [1982] proposes that labour mobility is involuntary, to the extent that it is the consequence of changes undergone by some variables, exogenous to the decisions of individuals. More precisely, the changes resulting from sectorial distribution of employment would be responsible for the fact that a relocation of workforce must be undergone in the labour market (from the sectors losing jobs to those creating employment), which would explain, at least partially, the fluctuations observed in unemployment levels. All in all, Lilien's research provides an interesting theoretical framework on which the study of the relationship between tertiarisation, job opportunities and labour market results can be based, by means of considering that labour mobility can also respond to an involuntary definition.

On the basis of the previous considerations, the approach of the research suggests that:

- tertiatisation processes imply sectorial processes of employment creation and destruction simultaneously;
- these processes generate the necessity for labour relocation;
- and they materialise by means of labour transitions;
- however, those considerations are conditioned by qualifying criteria;
- therefore, the relationship of the individuals with the consequences of tertiarisation, and their job opportunities, will be different in accordance with their initial qualifying characteristics.

Some initial data support the relevance of the approach followed throughout the study, and at the same time they adequately introduce the issue. In this sense, it is enough to remember that tertiarisation processes have a very significant effect economies, causing important changes in the sectoral weighting of employment. In 1960, services were 39 per cent of total employment in the European Union. In contrast, this percentage amounted to 65 per cent in 1997, and a growing constant trend in the weight of tertiary employment is observed [European Commission, 2001]. In contrast, agricultural and industrial employment notably loses significance.

Within this aggregated reality, important differences are observed between the countries of the EU. Luxembourg, the United Kingdom, Sweden, Belgium, the Netherlands and Denmark register the highest weights for the tertiary sector, while it is in the countries initially less tertiarised (Greece, Spain, Portugal) where the expansion of services has been more intense [OECD, 2000].

Considering the internal heterogeneity of services, there are also different behaviours when a certain level of desegregation is taken into account. These differences are expressed not only in national terms (countries present different compositions in their service sectors) but also of their respective evolutions, that in broad terms are deemed favourable to services, production and those related to certain social needs.

In this latter sense, conclusions reached regarding a possible convergence of sectoral structures of employment are ambiguous [Fina *et al.*, 2000; García-Serrano, 2001].

Even when important national specificities are also observed, from the perspective of composition of job demand by occupations, an evolution is perceived from a structure based on manual work and qualification levels that could be considered as moderate in comparison with the current ones, to one where most of the employment is concentrated in the development of non-manual tasks, progressively associated with higher levels of qualifications.

It is important to remember the existence of a close relationship between sectoral and occupational structure, so the sectoral structure determines to a large extent the existence of a certain occupational structure, and the main variable at the same time, explaining that the evolution of occupational requirements is the change undergone by the sectoral structure of employment. Thus, we are witnessing the occupational consequences of the tertiarisation processes from this perspective. This is established by the results obtained by different shift-share analyses regarding the Spanish case, separating the change of occupation into their sectoral and occupational components [see Cuadrado and Iglesias, 2003 for a summary].

And, finally, it is observed how the position of the individuals in the coordinates defined by the activity sector and the occupation, as defined by its relationship with the tertiarisation processes, introduces notable differences regarding its labour results. Cuadrado and Iglesias [2003] conducted a study in connection with the Spanish case. Using data from the Spanish Labour Force Survey concerning the unemployed with previous labour experience, they concluded there were links between the composition and evolution of this variable, with implications for the tertiarisation processes. Their results establish how unemployment is specially reduced in tertiary activities, while it becomes more accentuated in connection with those occupations requiring lower skills.

Taking up the approach of the study again, to use labour transitions as indicators of job opportunities for individuals requires that the job has longitudinal data to be used for the study of the characteristics of labour flows. To this purpose, the different waves of the European Community Household Panel (ECHP) can be used in order to construct indicators to approach the basic characteristics of transitions taking place in the labour market.

Despite the tendency of the study to take into consideration all the countries of the European Union at the date it was carried out,[2] due to the restrictions imposed by the data it was advisable to limit the study to the following nine countries: Denmark, Holland, Belgium, France, Ireland, Italy, Greece, Spain and Portugal.

The rest of the paper is structured as follows: section 2 includes the data for labour flows disaggregated by sectors and occupations, from the perspective of their origins and destinations. On the one hand, the aim is to determine whether both labour dimensions become restrictions to labour mobility or not, and, on the other hand, whether the common guidelines or the differences between countries prevail. In order to determine the implications of the previous guidelines in terms of labour opportunities for individuals, mobility indicators (hirings, dismissals and relocation) are constructed in section 3, analysing their behaviour in the countries under consideration. These ideas

are examined in section 4 by means of an estimate of a logit model with panel data. The main results obtained are highlighted in section 5.

RESTRICTIONS TO LABOUR MOBILITY: LABOUR FLOWS BY ACTIVITY SECTORS AND OCCUPATIONS.

According to our hypothesis, labour opportunities, expressed in terms of participation in labour mobility processes, are conditioned by qualifying criteria. In order to confirm this, we will try to find out the level of applicability of the qualifying contents in question. Such contents are defined by activity sector as well as by the kind of work developed (occupation), and the connection guidelines observed between the different categories of both variables. In this way, we will conclude whether all the sectors and occupations are linked to each other in the same way without any restriction or, on the contrary, there are some guidelines that limit this general applicability. For that purpose, we will use the fact of an employee participating in a labour flow, implying a change of position within the structure of sectors or occupations, as an indicator of the level of sectoral and occupational applicability of the different qualifications.

We will analyse labour flows by considering the labour paths of individuals employed between two consecutive waves of the ECHP. We will make the distinction between inflows and outflows, disaggregated by sectors and occupations:

(a) *Outflows* by activity sectors (occupations). Percentage of employed people in one sector (occupation) that has changed its location in the following wave. Outflows constitute the origin of employment of other sectors (occupations).
(b) *Inflows* by activity sectors (occupations). Percentage of employed people in one sector (occupation) during a wave, who were employed in a different sector (occupation) in the wave before. Outflows constitute the destination of employment of other sectors (occupations).

To the extent that, apart from another sector (occupation), the origin and destination can be inactivity, unemployment or the sector itself (occupation), labour flows included in the tables do not add up to 100 per cent. The flows, although they are calculated annually, are expressed on average for the whole period (1994 2001). Finally, the flows have been disaggregated by four sectors: agriculture, industry, construction, services; and four occupations: white-collar high-skill, white-collar low-skill, blue-collar high-skill, blue-collar low-skill, which is widely used terminology.

Origin and Destination of Employment by Activity Sectors

Table 1 shows the average percentage of people who stay in the corresponding activities (remain) and the average percentage of people who give up those activities in order to move to other sectors (outflows). To the extent that only movements inside employment are considered, these data inform about the level to which employment in one sector is applicable in the rest of activities, as location is found

TABLE 1
LABOUR OUTFLOWS BY SECTOR OF ORIGIN FOR THE EUROPEAN COUNTRIES (AVERAGE PERCENTAGES)

	Average 1994–2001: Origin							
	Agriculture		Industry		Construction		Services	
	Remain	Outflow	Remain	Outflow	Remain	Outflow	Remain	Outflow
Denmark	95.8	4.2	96.3	3.7	96.0	4.0	98.9	1.1
Holland	91.9	8.1	89.1	10.9	91.7	8.3	97.9	2.1
Belgium	92.7	5.2	75.8	24.2	80.2	19.8	94.9	5.1
France	97.6	2.4	97.8	2.2	97.5	2.5	99.4	0.6
Ireland	93.9	6.1	84.4	15.6	83.9	16.1	95.3	4.7
Italy	94.5	5.5	90.9	9.1	90.3	9.7	97.0	3.0
Greece	96.8	3.2	95.3	4.7	95.2	4.8	98.6	1.4
Spain	89.0	11.0	85.0	15.0	85.7	14.3	95.0	5.0
Portugal	95.5	4.5	92.1	7.9	91.0	9.0	96.8	3.2
Average	94.2	5.6	89.6	10.4	90.2	9.8	97.1	2.9

Source: ECHP, 1994 2001.

in them. On average for the group of countries, sectoral labour flows of destination are more intense when they are originated in industry and construction, implying about 10 per cent of their employment, although they are also the ones with the highest dispersion by countries.

From the perspective of those countries for which there are available data, the following basic guidelines are observed:

(a) Denmark is the country that registers the most intense flows out of agriculture;
(b) the same occurs in Holland, Belgium and Spain as regards industry;
(c) in France, Ireland, Italy, Greece, Portugal and Austria, the prevailing flows are out of the construction sector.

The flows out of services do not represent the highest percentages in any country, which could mean that it is the activity sector with least outflows of workers towards other sectors.

Table 2 shows the average percentage of people who were already in the corresponding activities during the previous period (remain) and the average percentage of people who have joined those activities from other sectors (inflows). In addition to the previous perspective, these data would illustrate the level to which the employment of the remaining sectors is applicable in a specific sector. From an aggregated point of view, for the group of nine countries, services reflect the higher average percentages of the four sectors. This guideline is also clearly observed for each and all of the countries considered.

Apart from the construction of these data (outflows and inflows), the previous results obviously show the activity sectors where the majority of employment loss

TABLE 2
LABOUR INFLOWS BY SECTOR OF DESTINATION IN THE EUROPEAN COUNTRIES
(AVERAGE PERCENTAGES)

	Average 1994–2001: Destination							
	Agriculture		Industry		Construction		Services	
	Remain	Inflow	Remain	Inflow	Remain	Inflow	Remain	Inflow
Denmark	96.5	1.2	96.0	3.8	94.6	0.8	99.1	8.1
Holland	91.9	1.3	89.6	5.7	90.1	2.2	97.9	21.3
Belgium	90.1	0.3	75.7	13.2	78.6	3.3	95.0	41.0
France	97.9	0.4	98.1	1.4	97.8	0.5	99.3	4.7
Ireland	95.5	4.1	84.9	10.8	82.8	4.2	94.9	22.9
Italy	94.3	1.3	92.1	6.4	91.1	2.4	96.6	15.8
Greece	97.7	2.9	97.1	2.5	94.4	1.4	98.0	6.1
Spain	90.1	3.8	84.4	10.9	84.1	6.2	95.3	25.0
Portugal	96.3	4.3	92.4	4.9	90.6	3.4	96.4	11.7
Average	94.5	2.2	90.0	6.6	89.3	2.7	96.9	17.4

Source: ECHP, 1994 2001.

and creation is concentrated. Services constitute the main destination of the individuals who abandoned their activities, since it is the tertiary sector where the greatest (quantitative) opportunities of getting a job are concentrated. The lower outflow frequencies are observed in the service sector, due to the fact that needs of labour relocation in this sector are less than in non-tertiary activities.

In order to deepen into the previous results, we are going to disaggregate this information, firstly, taking into consideration the activity sector at which the outflows of each of the four sectors included in the analysis are aimed, and, secondly, the sector of origin of inflows to employment in each activity sector.

Table 3 disaggregates the outflows experienced in each of the four large activity sectors towards one of the other three. It is observed that:

(a) Outflows from agriculture are mainly directed towards services. This guideline is fulfilled by all the countries except for Holland, Greece and Spain, where the connection is more intense with the industrial activities.
(b) Outflows from industry are directed with special intensity towards services. All countries fulfil this aggregated behaviour, without exceptions.
(c) Employment movements originated in the construction sector are directed towards industry. It is a guideline fulfilled in all countries, with the exceptions of France and Greece.
(d) Outflows from services are mainly directed towards industry. All the countries analysed fulfil the aggregated guideline except for Greece.

Table 4 completes the analysis, disaggregating the inflows produced in each of the sectors according to the sector of origin. The service sector dominates flows into employment from agriculture (except for Denmark), industry (all countries)

TABLE 3
SECTORAL DISTRIBUTION OF OUTFLOWS OF EACH SECTOR IN THE EUROPEAN COUNTRIES (AVERAGE PERCENTAGES)

		Average 1994–2001		
ORIGIN	**Countries**	**Industry**	**Construction**	**Services**
Agriculture	Denmark	10.8	0.0	18.5
	Holland	0.0	14.3	6.8
	Belgium	0.0	0.0	12.0
	France	6.3	0.0	9.5
	Ireland	7.1	26.3	32.5
	Italy	13.5	13.6	19.1
	Greece	7.1	60.0	23.7
	Spain	6.8	29.4	24.2
	Portugal	25.9	24.0	42.2
	Average	10.8	18.6	18.5
		Agriculture	**Construction**	**Services**
Industry	Denmark	8.6	18.9	72.5
	Holland	3.6	12.0	84.4
	Belgium	1.2	10.0	88.9
	France	1.8	11.7	86.5
	Ireland	8.9	21.8	69.3
	Italy	6.9	10.6	82.6
	Greece	11.3	11.3	77.4
	Spain	7.1	23.0	70.0
	Portugal	14.5	22.4	63.1
	Average	7.1	15.7	77.2
		Agriculture	**Industry**	**Services**
Construction	Denmark	0.0	41.3	25.9
	Holland	3.7	24.8	11.4
	Belgium	0.0	47.1	12.0
	France	4.0	23.8	23.8
	Ireland	5.7	28.4	20.0
	Italy	8.5	29.7	21.3
	Greece	16.8	13.8	31.6
	Spain	8.0	44.0	24.2
	Portugal	17.5	27.3	24.4
	Average	7.1	31.1	21.6
		Agriculture	**Industry**	**Construction**
Services	Denmark	12.8	67.1	20.1
	Holland	11.0	67.2	21.8
	Belgium	4.9	75.4	19.7
	France	17.7	62.9	19.4
	Ireland	13.4	63.1	23.5
	Italy	12.9	63.9	23.2
	Greece	27.9	32.0	40.1
	Spain	16.6	58.5	24.9
	Portugal	26.0	44.6	29.5
	Average	15.9	59.4	24.7

Source: ECHP, 1994 2001.

and construction (except for Belgium, Spain and Greece). As regards labour flows whose destination is the service sector, these mainly come from the industrial activities.

TABLE 4
SECTORAL DISTRIBUTION OF INFLOWS OF EACH SECTOR IN THE EUROPEAN COUNTRIES
(AVERAGE PERCENTAGES)

		Average 1994–2001		
Destination	**Countries**	**Industry**	**Construction**	**Services**
Agriculture	Denmark	9.8	12.3	6.6
	Holland	1.4	9.3	10.8
	Belgium	0.6	0.0	3.5
	France	5.6	5.9	12.0
	Ireland	10.1	11.4	20.6
	Italy	5.9	5.5	11.8
	Greece	21.6	34.6	43.2
	Spain	7.8	15.0	17.3
	Portugal	14.7	24.5	30.4
	Average	8.6	13.2	17.4
		Agriculture	**Construction**	**Services**
Industry	Denmark	39.0	35.5	70.8
	Holland	20.5	26.9	69.0
	Belgium	22.0	33.2	82.3
	France	11.9	33.7	65.1
	Ireland	31.0	39.0	53.9
	Italy	25.9	27.7	65.5
	Greece	22.2	18.1	38.1
	Spain	22.4	36.6	59.7
	Portugal	23.2	26.7	41.2
	Average	24.2	30.8	60.6
		Agriculture	**Industry**	**Services**
Construction	Denmark	0.0	13.2	22.6
	Holland	7.0	9.5	20.3
	Belgium	0.0	16.0	14.2
	France	7.6	10.3	23.0
	Ireland	11.6	14.2	25.5
	Italy	17.0	14.5	22.8
	Greece	24.0	13.8	18.7
	Spain	13.8	23.9	23.0
	Portugal	21.0	22.1	28.4
	Average	11.3	15.3	22.0
		Agriculture	**Industry**	**Construction**
Services	Denmark	61.0	77.1	52.2
	Holland	72.5	89.1	63.8
	Belgium	78.0	83.4	66.8
	France	80.5	84.1	60.4
	Ireland	57.4	75.7	49.6
	Italy	57.1	79.6	66.8
	Greece	53.8	64.6	47.4
	Spain	63.9	68.3	48.4
	Portugal	55.9	63.2	48.8
	Average	64.4	76.1	56.0

Source: ECHP, 1994 2001.

All in all, and as basic conclusions, outflows are especially important when they originate in industry and construction, and tertiary activities are their most usual destination. From a complementary perspective, services are the most important component of sectoral inflows. Moreover, and with just a few exceptions, most of inflows

TABLE 5
LABOUR OUTFLOWS BY OCCUPATION OF ORIGIN IN THE EUROPEAN COUNTRIES
(AVERAGE PERCENTAGES)

	Average 1994–2001: Origin							
	WCHS		WCLS		BCHS		BCLS	
	Remain	Outflow	Remain	Outflow	Remain	Outflow	Remain	Outflow
Denmark	94.8	5.2	94.0	6.0	91.5	8.5	87.1	12.9
Holland	86.8	13.2	88.5	11.5	84.7	15.3	81.5	18.5
Belgium	79.3	20.7	83.0	17.0	73.4	26.6	71.8	28.2
France	98.5	1.5	98.1	1.9	97.7	2.3	96.2	3.8
Ireland	87.5	12.5	86.6	13.4	90.5	9.5	82.7	17.3
Italy	91.0	9.0	93.8	6.2	89.4	10.6	83.4	16.6
Greece	95.0	5.0	95.1	4.9	96.5	3.5	93.7	6.3
Spain	84.5	15.5	85.9	14.1	82.4	17.6	79.6	20.4
Portugal	84.8	15.2	87.8	12.2	90.1	9.9	83.0	17.0
Average	89.1	10.9	90.3	9.7	88.5	11.5	84.3	15.7

Source: ECHP, 1994 2001.
Note: WCHS white collar high skill; WCLS white collar low skill; BCHS blue collar high skill; BCLS blue collar low skill.

into non-tertiary sectors come from the service sector. From both perspectives (outflow and inflow), the services show an especial connection to industry.

Origin and Destination of Employment by Occupations

Table 5 changes the perspective of analysis, now reflecting the labour outflows disaggregated by occupations. Not only the aggregated guideline, but also the corresponding national guidelines set the most intense outflows as being in the white-collar occupations, which is especially notable in the case of those requiring low skills.

TABLE 6
LABOUR INFLOWS BY OCCUPATION OF DESTINATION IN THE EUROPEAN COUNTRIES
(AVERAGE PERCENTAGES)

	Average 1994–2001: Destination							
	WCHS		WCLS		BCHS		BCLS	
	Remain	Inflow	Remain	Inflow	Remain	Inflow	Remain	Inflow
Denmark	93.0	3.6	93.4	14.0	92.6	4.7	90.0	8.8
Holland	84.9	13.5	88.6	24.7	86.8	7.7	84.0	9.8
Belgium	79.4	13.4	81.8	40.8	70.9	10.9	75.9	26.9
France	97.0	0.7	98.4	5.0	97.6	1.7	97.1	2.5
Ireland	86.1	10.7	87.0	18.8	89.2	9.9	85.1	13.1
Italy	89.7	3.4	93.4	16.3	89.5	12.4	85.0	10.4
Greece	95.5	5.1	94.4	5.5	97.1	6.9	92.6	2.9
Spain	83.4	12.2	85.8	20.1	82.6	18.3	80.6	17.0
Portugal	82.5	5.9	89.7	20.5	90.3	16.9	81.7	12.5
Average	87.9	7.6	90.3	18.4	88.5	9.9	85.8	11.5

Source: ECHP, 1994 2001.

TABLE 7
DISTRIBUTION OF OUTFLOWS BY OCCUPATIONS (AVERAGE PERCENTAGES)

		Average 1994–2001: Origin		
Origin	**Countries**	**WCLS**	**BCHS**	**BCLS**
WCHS	Denmark	20.5	8.3	4.3
	Holland	49.4	33.3	7.5
	Belgium	65.0	0.0	16.0
	France	48.4	14.3	7.4
	Ireland	34.7	17.6	12.1
	Italy	20.9	2.8	1.6
	Greece	51.7	4.3	9.4
	Spain	32.8	8.5	5.1
	Portugal	26.3	7.5	2.8
	Average	38.9	10.7	7.4
		WCHS	**BCHS**	**BCLS**
WCLS	Denmark	48.7	13.6	37.7
	Holland	70.7	7.0	22.3
	Belgium	59.8	9.0	31.2
	France	47.0	20.5	32.5
	Ireland	56.9	9.0	34.1
	Italy	35.1	24.7	40.2
	Greece	52.7	20.7	26.6
	Spain	54.7	16.5	28.9
	Portugal	39.7	17.4	42.9
	Average	51.7	15.4	33.0
		WCHS	**WCLS**	**BCLS**
BCHS	Denmark	8.3	40.0	27.7
	Holland	26.1	31.9	22.5
	Belgium	10.4	30.9	32.0
	France	9.4	42.4	55.6
	Ireland	19.9	20.9	36.4
	Italy	3.9	29.0	63.5
	Greece	21.1	23.3	75.0
	Spain	18.4	17.7	59.0
	Portugal	12.4	16.5	76.1
	Average	14.4	28.1	49.7
		WCHS	**WCLS**	**BCHS**
BCLS	Denmark	12.7	64.0	23.2
	Holland	15.1	59.9	24.9
	Belgium	3.5	56.3	40.2
	France	6.6	53.2	40.1
	Ireland	10.8	47.7	41.6
	Italy	2.1	38.8	59.1
	Greece	7.2	38.6	54.2
	Spain	6.5	36.2	57.4
	Portugal	2.6	31.3	66.2
	Average	7.5	47.3	45.2

Source: ECHP, 1994 2001.

According to the data included in Table 6, the most intense labour inflows take place, without any national exception, for the low-skill occupations, particularly white-collar jobs (WCLS).

Similar to the sectoral perspective, Tables 7 and 8 disaggregate outflows and inflows by occupations of destination or origin of movements. In short, the tables

TABLE 8
DISTRIBUTION OF INFLOWS BY OCCUPATIONS (AVERAGE PERCENTAGES)

		Average 1994–2001: Destination		
Destination	**Countries**	**WCLS**	**BCHS**	**BCLS**
WCHS	Denmark	39.2	6.2	7.0
	Holland	62.4	27.1	11.3
	Belgium	57.5	5.8	5.4
	France	29.9	3.6	5.7
	Ireland	44.4	25.4	10.2
	Italy	27.6	4.2	2.9
	Greece	55.5	24.8	11.6
	Spain	47.0	18.3	6.2
	Portugal	36.5	11.1	3.8
	Average	44.4	14.1	7.1
		WCHS	**BCHS**	**BCLS**
WCLS	Denmark	76.9	37.6	59.9
	Holland	84.6	27.8	56.9
	Belgium	87.5	22.2	59.8
	France	81.3	37.8	54.7
	Ireland	74.6	15.0	47.4
	Italy	86.5	23.5	33.3
	Greece	65.2	18.7	22.9
	Spain	70.4	18.2	31.1
	Portugal	74.3	15.9	34.0
	Average	77.9	24.1	44.4
		WCHS	**WCLS**	**BCLS**
BCHS	Denmark	6.4	12.3	32.7
	Holland	8.3	9.0	31.8
	Belgium	8.5	9.4	34.8
	France	9.9	22.9	39.6
	Ireland	13.0	11.5	42.4
	Italy	8.2	28.2	63.8
	Greece	29.3	22.6	65.6
	Spain	20.9	16.3	62.8
	Portugal	21.1	21.8	62.2
	Average	14.0	17.1	48.4
		WCHS	**WCLS**	**BCHS**
BCLS	Denmark	16.6	48.5	55.2
	Holland	7.1	28.6	45.1
	Belgium	4.0	33.1	72.0
	France	8.8	47.2	58.5
	Ireland	12.4	44.1	59.6
	Italy	5.3	44.2	72.3
	Greece	5.5	21.9	56.5
	Spain	8.7	36.8	63.5
	Portugal	4.6	41.6	73.0
	Average	8.1	38.5	61.8

Source: ECHP, 1994 2001.

provide information about the labour links between the most important kinds of occupations. The results obtained are particularly conclusive:

(a) From the point of view of outflows, the connection pattern lies in the type of task (white- or blue-collar) rather than in the qualification level of the job in question.

(b) This clearly affects both occupations, white- and blue-collar, although in the case of low-skill ones, the guidelines are moderate, being related not only to high-skill white-collar, but also to low-skill white-collar jobs.
(c) This characteristic is clear when we focus on inflows. Both white-collar jobs are especially connected to each other by labour mobility, as in both blue-collar occupations.

All in all, are labour flows connected to each other in the same way and with similar intensity to all activity sectors and to the different occupations? Taking into consideration the previously examined data, the answer is No. Labour flows, and therefore job opportunities for the individuals involved are clearly restricted by occupational criteria and, at the same time, they are conditioned by the sectoral location of individuals. The relationship between the individuals and the consequences of tertiarisation processes, expressed in terms of their sectoral location origin occupation could be a relevant parameter to explain the participation of individuals in the processes of labour mobility.

DO LABOUR QUALIFICATIONS INFLUENCE THE GUIDELINES ON LABOUR MOBILITY OF INDIVIDUALS?

Once we have concluded that labour flows are conditioned by qualification criteria, we wonder whether the different sectoral/occupational location introduces differences in the labour mobility of the individuals. In order to check this out, we have established different mobility indicators, according to the definition normally used in the related literature [Antolín, 1997]:

(a) *Giving up rate*. The sum of flows from employment into inactivity, unemployment or self-employment.
(b) *Hiring rate*. The sum of flows into employment from inactivity, unemployment or self-employment.
(c) *Relocation rate*. The sum of the individuals who change their labour status from a period to another.[3]

Considering the movements from one job to another (EE), the activity or the occupation could be changed, or the characteristics of the previous job could be maintained. With the data provided by the ECHP, it is impossible to identify the movements undertaken in employment without any changes. That is the reason why, in order to measure job-to-job movements, we have only considered those implying any change of occupation or activity. If we take into consideration labour flows in this manner, a certain loss of information is implied; however, we guarantee that the movements considered are real.

Labour Mobility Guidelines according to Activity Sectors

Table 9 includes the results from constructing the rate of 'giving up' by activity sectors. On average, for the group of countries considered, 11.14 per cent of tertiary

TABLE 9
PERCENTAGE OF GIVING UP OVER THE EMPLOYMENT OF EACH SECTOR OF ORIGIN
(AVERAGE 1994–2001)

	Agriculture	Industry	Construction	Service
Denmark	12.68	11.04	9.17	8.62
Holland	19.46	17.61	12.54	8.20
Belgium	29.11	29.64	28.83	17.05
France	11.59	9.57	10.31	8.74
Ireland	14.31	22.95	22.17	13.83
Italy	19.55	14.93	19.63	9.46
Greece	16.92	14.16	12.28	9.31
Spain	28.18	24.15	25.52	15.77
Portugal	17.38	14.09	12.85	9.31
Average	18.80	17.57	17.03	11.14

Source: based on data from ECHP, 1994 2001.

employment leaves their jobs to move into a job in another sector, unemployment or inactivity. In accordance with data included in Table 9, the rates for giving up are higher in all non-tertiary sectors: agriculture (18 per cent), industry and construction (17 per cent), and this is true in all countries without any exceptions.

Hiring rates are shown in Table 10. In parallel with the previous case, the reading of this table would be, on average terms, almost 13 per cent of those hired in the service sector came from outside the sector, from unemployment or from inactivity. According to this new indicator, it can be seen that hiring is higher in the construction sector, except for Belgium and France (where the same occurs in industry) and in Holland (agriculture). On average, for the group of countries considered, almost 19 out of each 100 employees belonging to the construction sector come from unemployment, inactivity or a different sector. Hiring rates are lower in the rest of the activities.

To analyse globally which movements are undertaken within an activity sector, we could calculate the difference between hiring and giving up. However, the previous rates of giving up and hiring cannot be subtracted, because they are calculated

TABLE 10
PERCENTAGE OF HIRING OVER THE EMPLOYMENT OF EACH SECTOR OF DESTINATION
(AVERAGE 1994–2001)

	Agriculture	Industry	Construction	Service
Denmark	9.43	8.83	9.56	8.07
Holland	17.52	15.98	15.52	9.18
Belgium	28.11	34.37	31.77	21.45
France	8.59	9.61	9.39	9.59
Ireland	10.33	24.09	28.43	17.34
Italy	15.11	13.52	17.97	10.04
Greece	10.45	11.00	11.82	11.30
Spain	25.30	25.46	29.70	18.32
Portugal	12.97	13.21	15.57	11.55
Average	15.31	17.34	18.86	12.98

Source: based on data from ECHP 1994 2001.

TABLE 11
DIFFERENCE BETWEEN HIRING AND GIVING UP OVER THE TOTAL MOVEMENTS IN THE LABOUR MARKET BY ACTIVITY SECTORS (AVERAGE 1994–2001)

	Agriculture	Industry	Construction	Services
Denmark	−0.81	−2.01	−0.01	−3.90
Holland	−0.36	−1.22	1.01	4.05
Belgium	0.35	0.43	0.21	7.23
France	−0.55	0.04	−0.28	2.93
Ireland	−2.19	0.71	2.20	7.82
Italy	−1.42	−1.10	−0.56	1.16
Greece	−5.78	−1.89	−0.10	5.27
Spain	−0.75	0.71	1.42	4.27
Portugal	−4.71	−0.75	1.54	5.75
Average	−1.80	−0.56	0.60	3.84

Source: based on data from ECHP 1994 2001.

as a percentage over employment in the origin and destination respectively. That is why the previous indicators have been recalculated as the percentage of giving up and hiring over the total movements that have taken place in the labour market (total of people changing their labour situation from one period to another, either to another activity, to unemployment or to inactivity). Thus, the percentage of giving up and hiring can be subtracted to obtain a measure of the dynamism of the sector. The results of these calculations are included in Table 11.

Services and construction are the only activity sectors where positive signs in the net difference between hiring and giving up are observed, being much higher in the case of the tertiary sector. In contrast, industry and particularly agriculture present negative balances. Denmark is the only country where this general guideline is not fulfilled, which is clearly observed in the rest of the countries.

Finally, sectoral rates of relocation of workers have been calculated, which reflect the total movements of workers to or from other sectors, unemployment or inactivity in each of the sectors over the total labour movements. Table 12 shows these data,

TABLE 12
RELOCATION OF WORKERS BY LARGE BRANCHES OF ACTIVITIES OVER THE TOTAL MOVEMENTS IN THE LABOUR MARKET (AVERAGE 1994–2001)

	Agriculture	Industry	Construction	Services
Denmark	4.67	16.77	6.24	63.34
Holland	5.80	20.19	8.17	68.48
Belgium	3.47	23.15	7.57	61.17
France	3.27	14.25	5.33	54.62
Ireland	11.05	23.66	13.33	61.12
Italy	8.10	18.03	9.29	40.15
Greece	21.08	13.09	7.17	45.44
Spain	9.88	18.97	13.04	48.55
Portugal	27.27	19.33	13.91	47.69
Average	10.51	18.61	9.34	54.51

Source: based on data from ECHP 1994 2001.

indicating, for example, that on average, 4.6 per cent of relocations of workers or labour movements in Denmark take place in agriculture.

From the perspective provided by this new indicator, it is observed how services are, with large differences and for all the countries considered, the group of activities participating to a greater extent in the labour mobility processes registered in the labour market. Apart from the fact that services constitute the largest group of activities in terms of employment, it is also indicative of a higher labour dynamism amassed by this kind of activity. For the group of nine countries in question, more than a half (54.5 per cent) of labour flows are related to tertiary employment. Against this, industry limits its weighting to levels of 18 per cent. Agriculture (10 per cent) and construction (9 per cent) have lower weightings.

Guidelines of Labour Mobility according to Occupations

In accordance with the approaches set out, we have replicated the previous analysis disaggregating now the employment into the four largest occupations: blue- and white-collar; high- and low-skill. Again we have information about giving up (Table 13), hiring (Table 14), the difference between the two calculated as a percentage over the total movement of workers (Table 15) and relocation (Table 16).

The following basic guidelines are deducted from these data:

(a) Giving up (Table 13) on average is lower for white-collar high-skill jobs (WCHS) for the group of countries under analysis. However, numerous national specificities are observed:
   - France, Holland, Italy and Portugal register the minimum of giving up for white-collar occupations requiring lower skills.
   - Ireland has the lowest rate of giving up for the white-collar high-skill jobs.
   - The rest of countries follow the aggregate guidelines.

(b) From the perspective of hiring (Table 14), the highest rates are registered for blue-collar low-skill jobs. This guideline has only two national exceptions: Belgium, where the highest amount of hiring is registered for blue-collar

TABLE 13
PERCENTAGE OF GIVING UP OVER THE EMPLOYMENT OF EACH OCCUPATION OF ORIGIN (AVERAGE 1994–2001)

	WCHS	WCLS	BCHS	BCLS
Denmark	10.33	15.55	15.13	28.16
Holland	16.99	16.62	20.56	28.37
Belgium	22.42	26.56	38.96	41.12
France	7.24	9.77	9.98	12.81
Ireland	16.46	22.84	15.78	28.49
Italy	13.12	12.04	18.08	25.98
Greece	10.08	14.15	15.16	15.53
Spain	20.45	23.94	27.98	34.41
Portugal	18.52	17.74	18.27	23.74
Average	15.07	17.69	19.99	26.51

Source: based on data from ECHP 1994 2001.

TABLE 14
PERCENTAGE OF HIRING OVER THE EMPLOYMENT OF EACH OCCUPATION OF DESTINATION (AVERAGE 1994–2001)

	WCHS	WCLS	BCHS	BCLS
Denmark	12.55	16.62	13.93	23.68
Holland	18.56	17.68	18.76	26.48
Belgium	22.33	31.59	42.54	40.68
France	8.05	10.60	8.49	13.09
Ireland	19.41	26.28	17.07	28.61
Italy	14.40	12.86	16.68	22.82
Greece	9.64	17.17	10.56	16.04
Spain	23.04	26.90	28.08	35.38
Portugal	21.15	17.86	16.61	25.96
Average	16.57	19.73	19.19	25.86

Source: based on data from ECHP 1994 2001.

high-skill jobs; and Greece, which has the highest rates of hiring for white-collar low-skill jobs.

(c) In net terms (Table 15) (hiring minus giving up calculated as a percentage of the total movements of workers) positive signs are observed for the two white-collar occupations (higher for those requiring low skills) and negative signs for the two blue-collar occupations (lower for those requiring low skills).

(d) The highest levels of relocation (Table 16) (total labour movements) are registered by white-collar low-skill jobs. All countries fulfil this guideline, with the only exceptions of Greece and Portugal.

In short, on the basis of the analyses carried out, we can declare that labour mobility processes are dominated by services, not only from a quantitative point of view (relocation rates) but also qualitative (differential between hiring and giving up). From the perspective of occupations, the highest positive differentials between hiring and giving up take place in the case of white-collar jobs, particularly those

TABLE 15
DIFFERENCE BETWEEN HIRING AND GIVING UP OVER THE TOTAL MOVEMENTS IN THE LABOUR MARKET BY OCCUPATIONS (AVERAGE 1994–2001)

	WCHS	WCLS	BCHS	BCLS
Denmark	2.06	1.83	−0.84	−3.89
Holland	1.97	2.14	−0.62	−1.22
Belgium	0.53	6.03	1.12	−0.89
France	0.57	1.99	−1.25	0.24
Ireland	2.19	4.10	0.88	0.04
Italy	0.54	1.08	−1.43	−2.41
Greece	−0.37	3.91	−6.97	0.48
Spain	1.18	2.52	0.02	0.65
Portugal	1.10	0.50	−2.73	1.99
Average	1.09	2.68	−1.31	−0.56

Source: based on data from ECHP 1994 2001.

TABLE 16
RELOCATION OF WORKERS BY LARGE OCCUPATIONS OVER THE TOTAL MOVEMENTS IN THE LABOUR MARKET (AVERAGE 1994–2001)

	WCHS	WCLS	BCHS	BCLS
Denmark	17.65	50.42	12.20	32.75
Holland	35.55	56.34	13.90	25.48
Belgium	22.13	48.51	15.49	27.47
France	10.64	38.98	13.84	19.60
Ireland	21.36	46.04	20.20	33.83
Italy	9.21	29.49	23.16	24.33
Greece	15.28	29.76	32.01	15.16
Spain	16.65	31.82	25.43	31.28
Portugal	13.92	33.90	42.21	37.19
Average	18.04	40.58	22.05	27.46

Source: based on data from ECHP 1994 2001.

requiring low skills (differential between hiring and giving up). Moreover, the latter kind of occupations also registers the highest levels of labour relocation.

Even when relevant national specificities are observed, the previous guidelines are associated with a notable level of fulfilment for all the nine countries under consideration, which reinforces the soundness of the previous conclusions.

PROBABILITIES OF TRANSITION

In this section, we will try to confirm some of the previous findings by means of estimating a series of models regarding the probability of transition within the labour market. Our basic analyses focus on the study of the probability of flowing out of employment (into inactivity or unemployment) or into employment (out of inactivity or unemployment) against staying in the same job.[4] We will try to find out to what extent transitions of workers are conditioned by the activity sector and/or the occupation.

Estimation Method

The estimation method developed has involved calculating a dynamic *logit* model on panel data with random effects.[5] Nowadays, this kind of model, whose origin is in the research developed by Heckman at the beginning of the 1980s [Heckman, 1981a, 1981b], are being used to estimate questions regarding mobility within the labour market. An example of this is the research carried out by Egger *et al*. [2003], Gong and van Soest [1991], Gong *et al.* [2000], and Hanse and Löfström [2001], among others. The specific form of our model for a specific number of individuals, *i*, during a period of time, *t*, and with a series of elections, *j*, is as follows:

$$V(\,i,\,j,\,t) = X'_{it}\beta_j + Z'_{it}\gamma_j + \alpha_{ij} + \varepsilon_{ijt} \qquad (1)^6$$

where X_{it} is the vector of explanatory dummies variables, in this case: 'women',

people of female sex; 'youth', people older than 18 and younger than 30; and 'senior', people older than 55. In the estimation of the model, we have always left apart one of the categories of the independent contrast variables to avoid multicolinearity. Vector Z_{it} includes the dummies providing the dynamic nature. In this case, vector Z_{it} is comprised of variables that reflect the activity and occupation. And finally, the parameter α_{ij} is a random effect reflecting the existence of non-observed heterogeneity and the parameter ε_{ijt} is the error term.

According to Equation (1), the probability of transition of the individuals can be calculated applying the following equation:

$$P(j|X_{it},Z_{it}, \alpha_{il}, \ldots, \alpha_{iJ}) = \frac{\exp(X'_{it}\beta_j + Z'_{it}\gamma_j + \alpha_{ij})}{\sum_{s=1}^{J} \exp(X'_{it}\beta_s + Z'_{it}\gamma_s + \alpha_{is})} \quad (2)$$

In our case, two different models have been estimated as we consider two different kinds of transitions: flows into and out of employment. Therefore, in the first model, if the individual, *i*, flows out of his/her job, the dependent variable takes the value 1 (j 1) and if he/she stays employed, it takes the value 0 (j 0). On the other hand, in the second model, if the individual, *i*, flows into employment, the dependent variable takes the value 1, and if he/she stays employed it takes the value 0.

Depending on which model is chosen, vector Z_{it} has a different temporal perspective. In the first model, Z_{it} reflects the activity and the occupation at the origin of the transition (t 1) as the outflows from employment are being considered. In the second case, vector Z_{it} changes and is comprised by the variables reflecting the activity and occupation at the end of the transition (t), according to the inflows under analysis.

The previous model has been estimated with the data from the ECHP, for the period 1994 2001, for the nine countries previously analysed. The results are included in the following section.

Results

Table 17 shows the probability that the individuals flow out of their jobs into either unemployment or inactivity, against the option of staying employed. The control variables show that for women there is a high probability of flowing out of employment, its coefficient within the model being 2,099. In terms of age, it is more likely that senior individuals, people older than 55, flow out of their jobs before young individuals between 18 and 30. These results are a simple reflection of usual labour behaviour. Young people tend to access a job and maintain a close relationship with the labour market, while in subsequent stages of life, the labour market is usually gradually given up.

The interesting and original aspect of this model is the consideration of the activity and occupation variables. Regarding the activity, it is more likely to flow out of the tertiary sector than from industry or construction. However, the differences are neither very high nor decisive. On the contrary, in the case of occupations, there are substantial differences, so it is more likely to flow out of an occupation in the

TABLE 17
ESTIMATION OF THE PROBABILITY OF FLOWING OUT OF THE JOB AGAINST STAYING EMPLOYED. (DYNAMIC LOGIT MODEL ON PANEL DATA WITH RANDOM EFFECTS)

Variables	Coef.	Std. Err.	Significance (95% conf. interval) P>/z/
Women	2.099	0.041	0.000
Youth	0.477	0.038	0.000
Senior	1.384	0.034	0.000
Industry	4.333	0.046	0.000
Construction	4.239	0.061	0.000
Services	4.472	0.038	0.000
WCHS	1.350	0.051	0.000
WCLS	1.232	0.035	0.000
BCHS	2.681	0.035	0.000
Holland	0.501	0.107	0.000
Belgium	1.154	0.109	0.000
France	0.791	0.097	0.000
Ireland	1.330	0.120	0.000
Italy	1.508	0.102	0.000
Greece	1.549	0.103	0.000
Spain	1.797	0.097	0.000
Portugal	0.813	0.101	0.000
Constant	−9.750	0.098	0.000

Number of observations: 418,132
Number of individuals: 52,662
Number of periods (waves): 8
Log likelihook: −98178.2
Wald chi2(17): 31147.7
Prob > chi^2: 0.000
Source: based on data from ECHP 1994 2001.

BCSH category than from a WCLS or WCHS job. This difference shows that, in general terms, labour transitions within this category are higher or there is a restructuring implying an important loss of employment within such a labour category. In order to confirm this question, it will be necessary to resort to the following model to contrast how the flows into employment are within the BCHS category. Nevertheless, this result confirms a part of the previous findings, in the sense that there is a generalised significant flow out of employment for the white-collar occupations at an European level.

Finally, the model includes the dummies as contrast variables on the countries used so far, except for Denmark, which is left aside to avoid multicolinearity. According to the results obtained, the countries where it is more likely to give up employment are Spain, Greece and Italy. All such countries have structural problems within their labour markets and a significant unemployment level (particularly if they are compared to Denmark, which is the country of reference). Furthermore, in the case of Spain, we already saw in Table 1 that outflows are high.

Secondly, the same kind of model has been estimated, but considering the probability of having moved into employment against the fact of having stayed employed. In this case, rather than the probability of flowing into employment, we investigate the characteristics in terms of the most determining activities and occupations for flowing

TABLE 18
ESTIMATION OF THE PROBABILITY OF FLOWING INTO EMPLOYMENT JOB AGAINST STAYING EMPLOYED (DYNAMIC LOGIT MODEL ON PANEL DATA WITH RANDOM EFFECTS)

Variables	Coef.	Std. Err.	Significance (95% conf. interval) P>/z/
Women	−3.118	0.051	0.000
Youth	−0.152	0.035	0.000
Senior	−0.239	0.032	0.000
Industry	4.067	0.047	0.000
Construction	3.778	0.060	0.000
Services	4.357	0.040	0.000
WCHS	1.500	0.051	0.000
WCLS	1.279	0.039	0.000
BCHS	2.518	0.036	0.000
Holland	1.373	0.116	0.000
Belgium	1.851	0.130	0.000
France	2.065	0.114	0.000
Ireland	2.109	0.118	0.000
Italy	2.218	0.098	0.000
Greece	2.503	0.107	0.000
Spain	2.387	0.099	0.000
Portugal	1.785	0.116	0.000
Constant	−6.794	0.095	0.000

Number of observations: 418,133
Number of individuals: 52,663
Number of periods (waves): 8
Log likelihook: −94046.4
Wad $chi^2(17)$: 30522.6
Prob > chi2: 0.000
Source: based on data from ECHP 1994 2001.

into employment. That is, to analyse the differential characteristics between those individuals who access a job and those who stay in it. The results are shown in Table 18. Women register a very low probability of flowing into employment. These results, in conjunction with the fact that women have a high probability of flowing out of employment, suggest an unfavourable labour situation for women in the European Union. We must also remember that women are one of the groups more affected by unemployment in the European countries, which determines their transitions to and from employment. However, in general terms and in relation to men, women normally enjoy more flexible labour lives, with a higher number of flows into and out of employment, which makes labour rotation higher [Albert and Toharia, 2001].

In terms of age, it is more likely that young people flow into employment than adults. Again, it is a logical result, coherent with labour relationships maintained throughout the lifecycle.

The probability of accessing a job is higher in the service sector than in industry or construction. Quite the opposite to what occurred with flows out of employment, in this case the tertiary sector marks a clear difference with respect to the other sectors, being displayed as a more flexible sector or a sector that generates a higher employment potential. This result partially supports the previous results regarding

the existence of a higher applicability of employment in the tertiary sector. Therefore, the inflows into the tertiary sector are also higher because its access is easier from the other productive sectors. All in all, and in general terms, the greatest labour opportunities occur in accordance with the tertiarisation process of the economy.

The occupations follow the guidelines established in the previous model. The probability of accessing employment is higher in the BCHS occupations than in WCHS and WCLS jobs. Thus, and according to the previous findings, the BCHS category shows a high rotation of workers, which allows greater labour flexibility, but also reflects the occupational change existing nowadays.

Last, those countries with a higher probability of accessing employment are Spain, Greece and Italy. However, as the contrast variable makes the difference between flowing into employment and staying in it, what the results establish together with those reached in the previous model is that labour rotation is high in these countries.

CONCLUSIONS

Our study shows that mobility of workers is conditioned by the current tertarisation process and the occupational changes among the European economies. Labour opportunities of individuals are clearly conditioned by occupational criteria and/or sectoral location.

The analysis developed regarding labour flows has demonstrated that the outflows of workers are more intense in industry and construction, while, on the contrary, the flows into employment tend to be higher in the service sector. Thus the service sector concentrates the largest job opportunities not only in quantitative, but also in qualitative terms. Likewise, it has been also confirmed that the services have a high applicability with respect to employment in other sectors; the majority of employees originating in other sectors have the service sector as their destination.

When analysing the same flows, but considering the occupations, we have confirmed that the largest flows out of employment occur within the blue-collar occupational categories and most of flows into employment are also produced in such categories. Therefore, we can state that white-collar occupations register a high rotation and that the labour market is immersed in a significant process of occupational change. Furthermore, we have also realised that the connection of labour flows at a European level tend to take place according to the kind of task to be developed (blue- and white-collar) rather than in connection with the type of qualification.[7]

The research carried out concerning hiring, giving up, the difference between the two, and relocation, leads us to confirm that labour guidelines are conditioned by the sectoral and occupational location of workers. In general terms, the service sector tends to monopolise the majority of existing labour mobility and, regarding labour occupations, we can confirm that most movement takes place in the blue-collar categories, with preference for those jobs requiring lower skills (BCLS).

And finally, the *logit* models confirm a part of the previous results. The main findings are registered in the analysis of occupations. The probability of flowing into and out of employment is high in the case of BCHS. These results are in keeping with the

previous findings, which confirm the existence of a larger labour rotation in these categories and a restructuring of employment by occupations. Regarding the activities, only the model of flows into employment shows the determining and clear differences, establishing that the highest number of flows into employment takes place in the service sector.

In short, considering the results reached, individuals and the European employment institutions should bear in mind that labour mobility is conditioned by the sectoral and occupational changes prevailing in society and, therefore, that job opportunities of workers are also determined by such considerations.

NOTES

1. A review of these models can be found in Sapsford and Tzannatos [1993].
2. At least those considered by the European Community Household Panel.
3. Labour relocation is defined as LR = UE + IE + EU + EI + EE, where DE are the transitions from unemployment into employment, IE are the flows from inactivity into employment, ED from employ ment into unemployment, EI from employment into inactivity and EE the changes produced within employment.
4. For the calculation of probabilities of transitions, 'stay employed' has been used as a referential category, and not other labour situations related to unemployment and inactivity, because, this way, when estimating the model, we have information regarding the activity and occupation developed by all individuals under analysis.
5. The individual effects are assumed as independent from the characteristics observed. That is the reason why the model is calculated with random effects. In parallel, the election of this kind of model allows us not to incur in the biases generated in the development of panel models with fixed effect, which are so difficult to eliminate or reduce [Hahn and Kuersteiner, 2004]. Transitions of individuals imply a certain heterogeneity that cannot be observed, that is to say, they are determined by certain characteristics of the individuals, which do not correspond to our estimation, and we suppose are distributed randomly among the individuals considered over the years.
6. As previously established, since random effects are developed, we are supposing that the parameter αij is not correlated to the error term.
7. For the Spanish case, this result has already been determined by Cuadrado and Rio [1993] and Cuadrado *et al*. [2003].

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